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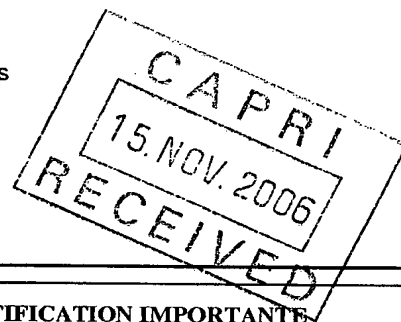
**PCT**

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SUR LA BREVETABILITÉ (CHAPITRE I OU CHAPITRE II  
DU TRAITE DE COOPERATION EN MATIERE DE BREVETS)

(règles 44bis.3.c) et 72.2 du PCT)

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Référence du dossier du déposant ou du mandataire VALS 963 PCT	<b>NOTIFICATION IMPORTANTE</b>
Demande internationale n° PCT/FR2004/050706	Date du dépôt international (jour/mois/année) 16 décembre 2004 (16.12.2004)
Déposant VALOIS SAS etc	

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**TRANSLATION**

**PATENT COOPERATION TREATY**

**PCT**

**INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY**

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference <b>VALS 963 PCT</b>	<b>FOR FURTHER ACTION</b>	See Form PCT/IPEA/416
International application No. <b>PCT/FR2004/050706</b>	International filing date (day/month/year) <b>16.12.2004</b>	Priority date (day/month/year) <b>19.12.2003</b>
International Patent Classification (IPC) or national classification and IPC <b>G01F13/00, A61M15/00</b>		
Applicant <b>VALOIS SAS</b>		

<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of <u>8</u> sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input checked="" type="checkbox"/> (sent to the applicant and to the International Bureau) a total of <u>3</u> sheets, as follows:</p> <p><input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>																									
<p>4. This report contains indications relating to the following items:</p> <table><tr><td><input checked="" type="checkbox"/></td><td>Box No. I</td><td>Basis of the report</td></tr><tr><td><input type="checkbox"/></td><td>Box No. II</td><td>Priority</td></tr><tr><td><input type="checkbox"/></td><td>Box No. III</td><td>Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</td></tr><tr><td><input type="checkbox"/></td><td>Box No. IV</td><td>Lack of unity of invention</td></tr><tr><td><input checked="" type="checkbox"/></td><td>Box No. V</td><td>Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</td></tr><tr><td><input type="checkbox"/></td><td>Box No. VI</td><td>Certain documents cited</td></tr><tr><td><input type="checkbox"/></td><td>Box No. VII</td><td>Certain defects in the international application</td></tr><tr><td><input checked="" type="checkbox"/></td><td>Box No. VIII</td><td>Certain observations on the international application</td></tr></table>		<input checked="" type="checkbox"/>	Box No. I	Basis of the report	<input type="checkbox"/>	Box No. II	Priority	<input type="checkbox"/>	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability	<input type="checkbox"/>	Box No. IV	Lack of unity of invention	<input checked="" type="checkbox"/>	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement	<input type="checkbox"/>	Box No. VI	Certain documents cited	<input type="checkbox"/>	Box No. VII	Certain defects in the international application	<input checked="" type="checkbox"/>	Box No. VIII	Certain observations on the international application
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Date of submission of the demand	Date of completion of this report																								
Name and mailing address of the IPEA/EP	Authorized officer																								
Facsimile No.	Telephone No.																								

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/FR2004/050706

Box No. I

Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language \_\_\_\_\_ which is the language of a translation furnished for the purposes of:
- ☐ international search (Rule 12.3 and 23.1(b))
- ☐ publication of the international application (Rule 12.4)
- ☐ international preliminary examination (Rule 55.2 and/or 55.3)
2. With regard to the elements of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:
- ☐ the international application as originally filed/furnished
- ☒ the description:
- pages 1-6 \_\_\_\_\_ as originally filed/furnished
- pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- ☒ the claims:
- nos. \_\_\_\_\_ as originally filed/furnished
- nos.\* \_\_\_\_\_ as amended (together with any statement) under Article 19
- nos.\* 1-19 \_\_\_\_\_ received by this Authority on 18.10.2005 with letter
- nos.\* \_\_\_\_\_ received by this Authority on of 17.10.2005
- ☒ the drawings:
- sheets 1/3-3/3 \_\_\_\_\_ as originally filed/furnished
- sheets\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- sheets\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- ☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.
3. ☐ The amendments have resulted in the cancellation of:
- ☐ the description, pages \_\_\_\_\_
- ☐ the claims, nos. \_\_\_\_\_
- ☐ the drawings, sheets/figs \_\_\_\_\_
- ☐ the sequence listing (specify): \_\_\_\_\_
- ☐ any table(s) related to sequence listing (specify): \_\_\_\_\_
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- ☐ the description, pages \_\_\_\_\_
- ☐ the claims, nos. \_\_\_\_\_
- ☐ the drawings, sheets/figs \_\_\_\_\_
- ☐ the sequence listing (specify): \_\_\_\_\_
- ☐ any table(s) related to sequence listing (specify): \_\_\_\_\_

\* If item 4 applies, some or all of those sheets may be marked "superseded."

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

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Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement		
1. Statement			
Novelty (N)	Claims	1-19	YES
	Claims		NO
Inventive step (IS)	Claims	7-12, 14	YES
	Claims	1-6, 13, 15-19	NO
Industrial applicability (IA)	Claims	1-19	YES
	Claims		NO
2. Citations and explanations (Rule 70.7)			
1. Reference is made to the following documents:			
D1: US-A-6 138 669 (ROCCI, JR. ET AL) 31 October 2000 (2000-10-31)			
D2: US-A-6 119 684 (NÖHL ET AL) 19 September 2000 (2000-09-19)			
D3: GB-A-2 304 327 (KEVIN ANDREW MACLUSKY) 19 March 1997 (1997-03-19)			
D4: US-A-5 415 161 (RYDER) 16 May 1995 (1995-05-16)			
D5: US-A-6 129 702 (WOIAS ET AL) 10 October 2000 (2000-10-10)			
D6: US-A-5 433 342 (LURO) 18 July 1995 (1995-07-18)			
D7: GB-A-2 116 314 (DEBRECENI MEZOGAZDASAGI; GEPGYARTO ES SZOLGALTATO) 21 September 1983 (1983-09-21)			
D8: WO 02/070047 A (ADVANCED NEUROMODULATION SYSTEM, INC.) 12 September 2002 (2002-09-12)			
2. Claims 1 to 6 and claims 13 to 19 (which are dependent on claims 1 to 6)			
2.1 The present application fails to meet the requirements of PCT Article 33(1), since the subject matter of <b>independent claim 1</b> does not comply with the criterion			

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

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Box No. V

Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability;  
citations and explanations supporting such statement

of novelty as defined by PCT Article 33(2).

D1 describes (the references between parentheses apply to said document) a fluid dispensing device (abstract) comprising a fluid dispensing member (36, 20) and a dispensing head (26, 22, 30, 32) comprising a dispensing port (30) (column 4, line 55 to column 5, line 10; figure 1); said device comprises dispensing detection means (74, 76, 104, 106) for detecting the dispensing of a metered amount of fluid (column 6, lines 32 to 39 and 46 to 47; column 7, lines 48 to 51; figure 4A); said detection means (74, 76, 104, 106) are capable of generating a signal to inform the user that a metered amount of fluid has effectively been dispensed by the dispensing member (column 6, lines 24 to 27 and 32 to 35; figure 2); said detection means include a detector for detecting the passage of fluid from said dispensing member towards said dispensing orifice. Said detector comprises a piezoelectric material (column 7, line 66 to column 8, line 5; figure 5).

- 2.2 Taking D1 as the closest prior art, a person skilled in the art would consider that the subject matter of **independent claim 1** does not involve an inventive step (PCT Article 33(1) and (3)). The difference between the subject matter of claim 1 and the device of D1 is the use of a piezoelectric material in the detector. Taking the known solutions for measuring the deformation of a membrane in the field of fluid dispensing devices (in D5, for example) into consideration, a person skilled in the art would judge this alternative to the resistor network of the device according to D1 obvious.

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

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Box No. V

Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

- 2.3 The present application fails to meet the requirements of PCT Article 33(1), since the subject matter of **claims 2, 3 and 16** does not comply with the criterion of novelty as defined by PCT Article 33(2):
- claim 2 - see D1, figure 1 (dispensing member (36, 20), dispensing port (30), discharge channel (26, 24, 22), the detection means being included in the discharge channel (22));
  - claims 3 and 16 - implicit in D1.
- 2.4 The present application fails to meet the requirements of PCT Article 33(1), since the subject matter of **claims 4 to 6, 13, 15 and 17 to 19** does not involve an inventive step as defined by PCT Article 33(3):
- claims 4 to 6 - PVDF is a material known and used for its piezoelectric properties (see for example D4, column 2, lines 50-68), and can obviously be used in the device described in D1;
  - claims, 13, 15 and 17 to 19, which are dependent on claims 1 to 6 - in D1 (figure 1; abstract).
- 2.5 The combination of features of **claim 14** is not found in the prior art and cannot be derived in an obvious manner therefrom, for the following reasons: the two portions of the sleeve render assembly of the device simpler and easier while ensuring good leak-tightness.
3. **Claims 7 to 12 and 13 to 19 (dependent on claims 7 to 12)**
- 3.1 D1, which is considered to be the prior art closest to

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/FR2004/050706

Box No. V

Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability;  
citations and explanations supporting such statement

the subject matter of **claim 7**, describes (the references between parentheses apply to said document) a fluid dispensing device (abstract) comprising a fluid dispensing member and a dispensing head comprising a dispensing port (figure 1); said device comprises dispensing detection means for detecting the dispensing of a metered amount of fluid; said detection means are capable of generating a signal to inform the user that a metered amount of fluid has effectively been dispensed by the dispensing member; said detection means include a detector for detecting the passage of fluid from said dispensing member towards said dispensing orifice (abstract, figure 1). Said detector comprises a pressure-deformable membrane on which a network of resistors for measuring the deformation is arranged.

3.2 Consequently, the subject matter of claim 7 differs from this known device in that said detector comprises an optical fibre.

The subject matter of claim 7 is therefore novel (PCT Article 33(2)).

3.3 The problem that the present invention is intended to solve can be considered to be that of proposing an alternative to the detection device.

3.4 The solution to this problem, as proposed in claim 7 of the present application, is considered to involve an inventive step (PCT Article 33(3)) for the following reasons:

no prior art document proposes a pressure measurement

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International application No.

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Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
	<p>device including an optical fibre in the field of fluid dispensing devices. This optical measurement is advantageous in terms of miniaturisation, provided that an optical fibre compatible with the plastic moulding techniques is used.</p>
3.5	<p><b>Claims 8 to 19 are dependent on claim 7</b> and thus also comply, as such, with the PCT requirements of novelty and inventive step.</p>
4.	<p><b>Additional observations</b></p>
4.1	<p>D2 relates to a similar device that detects the supply of a measured amount by means of a temperature sensor, which measures a temperature difference caused by pressure variations (expansion causing cooling, for example).</p>
4.2	<p>D2 relates to a similar device that measures the amount of fluid supplied by means of an impeller and marks indicating the rotation made by the impeller during dispensing of the fluid.</p>
4.3	<p>D6 and D8 relate to a similar device containing a flow meter for checking that a predetermined amount of fluid is dispensed.</p>
4.4	<p>D7 relates to a device for measuring the amount of fluid dispensed by means of an optical device that includes a source and a light detector located either side of a dispensing channel.</p>



## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

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## Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

- 5.1 It is clear from the description (page 6, lines 9 to 12) and figure 4 that the detector including an optical fibre cannot function without a membrane that deforms when fluid passes, such that said deformation generates a stress in the optical fibre. These features are therefore essential for the definition of the invention as claimed in **claim 7** (requirement of PCT Article 6 in combination with PCT Rule 6.3(b)).
- 5.2 It is clear from the description (page 5, lines 6 to 9) and figures 1 to 3 that the detector including a piezoresistive material is a dynamic pressure detector arranged in a discharge channel linking the dispensing member to the dispensing port. These features are therefore essential for the definition of the invention as claimed in **claim 7** (requirement of PCT Article 6 in combination with PCT Rule 6.3(b)).
- 5.3 Claim 5 is not clear ("operating in respiration mode") (PCT Article 6).
- 5.4 Claim 18 is not clear ("so finely sprayed [...] that the spray cannot be detected by the user") (PCT Article 6).